

contained in the ribbons of the respective stacks and which are disposed at at least one end of each stack and wherein the number of optical fibers is more than 1800 and the fill factor is not greater than 85% in a one-and one-half inch duct.

REMARKS

The Examiner is thanked for the courtesies extended during the in person interview conducted on April 14, 2004.

Claims 1, 23 and 30 have been amended. Claims 1-30 are presently pending.

In addition, the specification has been amended to correct typographical errors uncovered during preparation of this response.

The Examiner's indication that claims 9-10 and 27-29 include allowable subject matter is also acknowledged.

In view of the claim amendments and the following remarks, reconsideration and allowance of the claims, as presently presented, are respectfully requested.

EXAMINER'S ACTION

The Claim Objections

Claim 30 was objected to for containing informalities. The Examiner stated that the requirement that, in the claimed optical fiber cable, "each of the ribbons in each stack comprises twenty-four optical fibers" conflicts with the further requirement that "the cable comprises additional optical fibers with a lesser number of optical fibers and which are disposed at at least one end of each stack". Referring to FIG. 5 and the paragraph bridging pages 14 and 15 of the specification, the optical fiber cable of the invention can have, for example, at least one twelve fiber ribbon 15 disposed at an end of a stack of ribbons 8, where a stack of ribbons 8 is contained in the bore of each of the tubes 3. Contrary to the Examiner's assertion, the wording of claim 30 and the supporting

disclosure do not require that the additional optical fiber ribbon in a tube be a part of the stack of ribbons 8 within the tube. To clarify what is being claimed, claim 30 has been amended to recite that "the cable comprises additional optical fibers with a lesser number of optical fibers than contained in the ribbons of the respective stacks and which"

Accordingly, the Examiner is respectfully requested to withdraw the claim objections.

The 35 U.S.C. § 103 Rejection

Claims 1-3, 5, 7-8, 11-12, 14, 16-23 and 25-26 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,192,178 ("Logan"), in view of applicant's admission of the prior art ("AAPA") and JP 55-108604 ("Nihei"). In addition, claims 4, 6, 13, 15 and 30 were rejected under 35 U.S.C. 103 as being unpatentable over Logan and AAPA as applied to claims 3, 5, 12, 14 and 23, and further in view of GR-20-CORE. Claims 1-30, as amended, clearly are patentable over the cited references.

Claim 1, as amended, is directed to an optical fiber cable having "greater than three and less than six" buffer tubes disposed in a single layer around a central strength member structure, where a stack of optical fiber ribbons, each of the ribbons comprising a plurality of optical fibers in side-by-side relation, is loosely received in the bore of each of the buffer tubes and the total number of optical fibers in the buffer tubes of the cable "is greater than 1000." Claim 1 further requires that "the jacket has a thickness and the buffer tubes and the central strength member structure have respective outer diameters selected such that the sum of one-half the diameter of the central strength member structure, the outer diameter of the buffer tube and the jacket thickness results in the

cable having a fill factor not greater than about 85% in a two inch duct." Support for this claim requirement, which represents the minimum diameter of the cable and determines the fill factor for installation of the cable in a duct, is found in the specification at, for example, page 9, line 14 to page 10, line 24.

As stated in the Office Action and discussed during the Examiner interview, the Examiner conceded that Logan fails to teach or suggest a loose tube cable structure including four or five buffer tubes, where the tubes contain, in total, greater than 1000 fibers and where the cable has a fill factor of not greater than about 85% in a two inch duct. Also, as discussed during the Examiner interview, although Logan states that at least one of its tube assemblies "can be stranded about a central member of the kind disclosed in U.S. Patent No. 5,621,841 [("Field")]", Field does not cure the deficiencies of Logan admitted by the Examiner. Further, Field, like Logan, fails to teach or suggest, or motivate one skilled in the art to develop, a cable having the combination of features required by claim 1.

Referring to the Examiner's assertion as to prior art admitted by the applicants at pages 2-3 of the specification, that portion of the specification simply states that certain duct sizes are common to the industry and that factors such as cable size, weight, bend radius, packing density, etc. are considered in the design of high fiber count optical fiber cables. The applicants' listing of some of the factors that may be considered in high fiber count optical fiber cable design is not, and cannot be considered to be, an admission that one of ordinary skill in the art, based solely on such listing or also in view of Logan, can, or would be motivated to, design the cable of claim 1 having the following combination of features: four or five buffer tubes disposed in a single layer about a central strength member structure, where each tube loosely contains a stack of optical

fiber ribbons and the total number of optical fibers in the tubes is greater than 1000 and where the sum of one-half the diameter of the central strength member structure, the outer diameter of the buffer tube and the jacket thickness results in the cable having a fill factor not greater than about 85% in a two inch duct. In addition, Nihei nowhere teaches or suggests a cable having the combination recited in claim 1.

Accordingly, claim 1 is patentable over the cited references, and applicants do not concede that the statements in the specification referenced by the Examiner constitute an admission of prior art.

In addition, claim 23, which claims an optical fiber cable having limitations corresponding to those recited in claim 1 except for the requirement that the cable have four buffer tubes, also is patentable for the same reasons that claim 1 is patentable, as discussed above.

In addition, claims 2-22 and 24-30, which depend directly or directly from claims 1 and 23, respectively, are also patentable for the same reasons as set forth above with respect to claim 1 and because of the further restrictions they recite.

It is, therefore, respectfully submitted that claims 1-30 are patentable over the cited references and withdrawal of the Section 103 rejections is respectfully requested.

CONCLUSION

For the foregoing reasons, it is believed that all of the claims, as presently presented, are patentable.

The Examiner is invited to telephone the undersigned if it is believed that further amendment and/or discussion would help to advance the prosecution of the present application.

Reconsideration and allowance of claims 1-30, therefore, ar respectfully
request d.

Respectfully submitted,



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